



Service Bulletin

Bulletin No.: 22-NA-173

Date: November, 2023

INFORMATION

Subject: Information on Transmission Fluid Leak

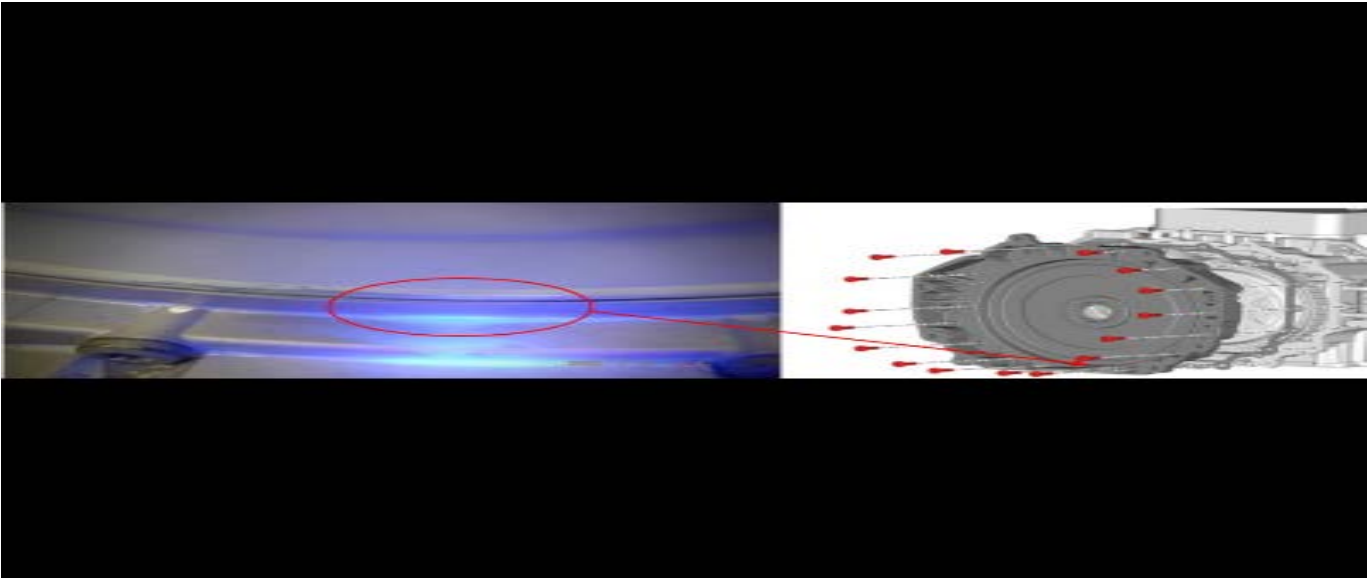
Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Corvette	2020	2024	—	—	All	All

Involved Region or Country	North America, Europe, Israel, Middle East, Japan, Thailand, Australia/New Zealand
Condition	Some customers may comment that transmission fluid can be seen under the vehicle.
Information	The following photos are only for informational purposes and to help guide technicians to known areas of possible leaks. Testing in the photos used fluorescent dye to aid in better photography. These transmissions were scrapped after dye was added. At no time should a technician in the field add dye to the M1L transmission. Technicians should only follow the trace powder diagnosis procedure recommended in <i>Fluid Leak Diagnosis</i> in the Service Manual.

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

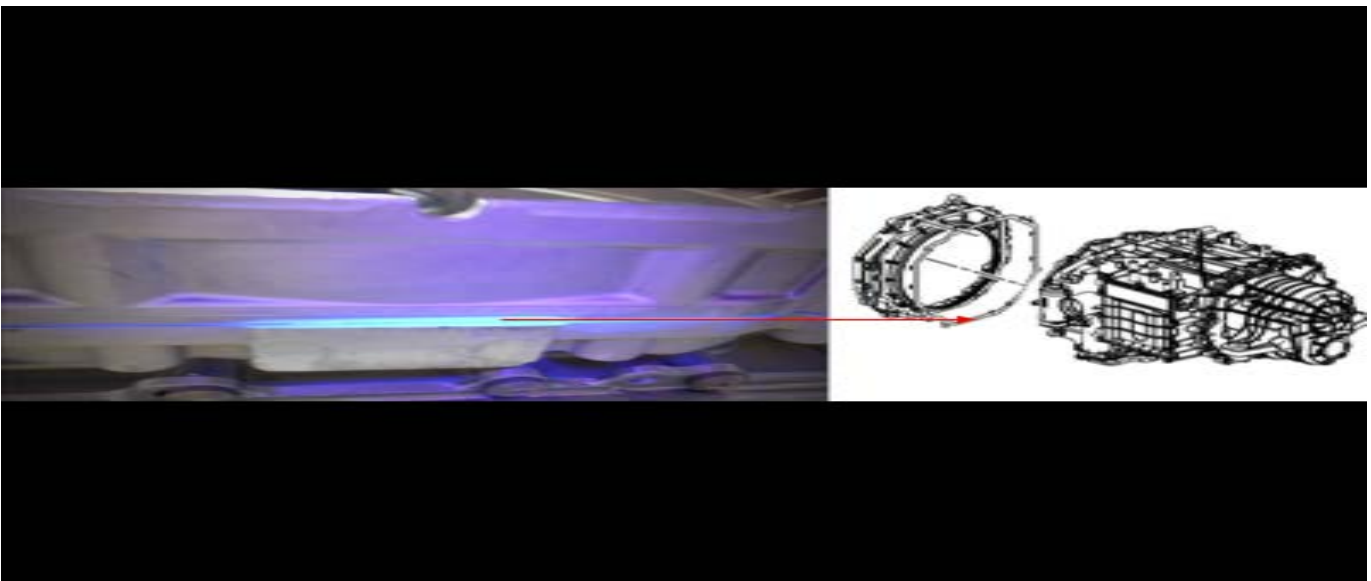
Examples of Transmission Leak Areas of Concern

When performing a leak test always be sure to clean the transmission thoroughly prior to powder testing. Make an attempt to protect the transmission labels from any type of solvent that may be used. Solvents can erase the print on the labels and make the transmission difficult to identify. A great opportunity to recreate the leak after powder application is to perform the Hydraulic System Leak Test in service information document 5659563 multiple times until a leak is visible. Because of the elevated RPMs in this test and the vehicle being stationary, always monitor engine temperature. If the coolant temperature is excessive and fans continue to run it may be necessary to allow the vehicle to cool before continuing testing.



6142752

A leak between sealing plate and Bell Housing.

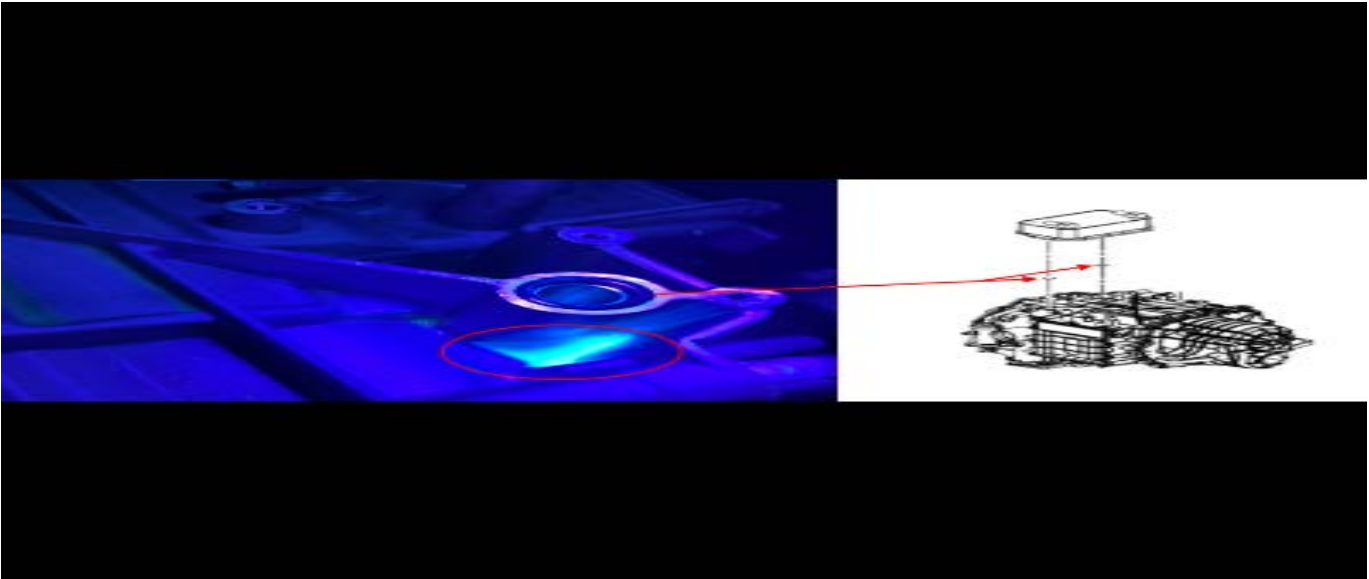


6142966

Leaks at the gasket area between the clutch and differential cover and the main case. There is a gasket in this area.

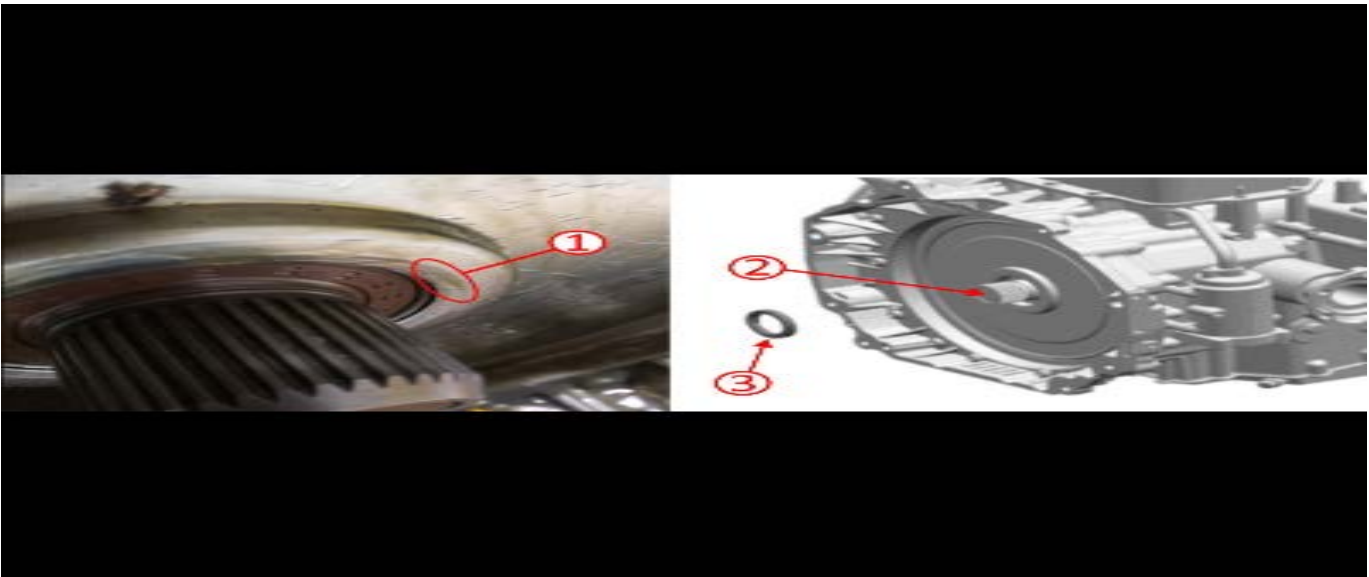
Video (Oil Leak) (SIO# 6460614)

This video above shows transmission case porosity, issue during testing.



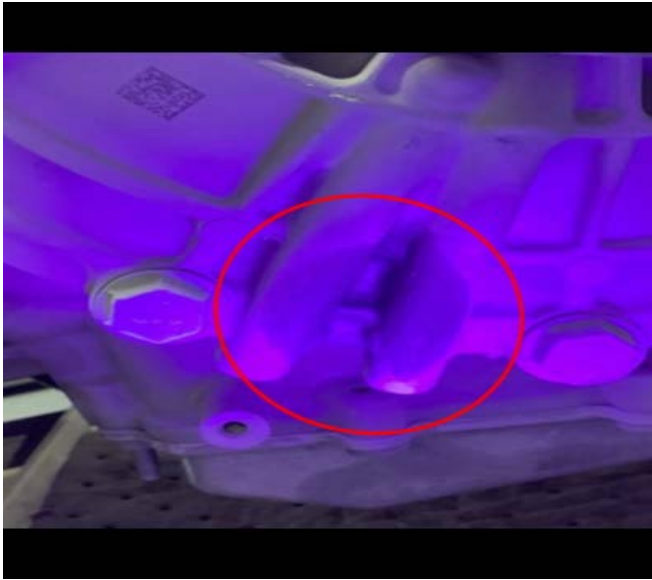
6142841

This is an area that is often mis-diagnosed as a transmission cooler issue. It was found that in most cases, leaks in this area are caused by transmission case porosity under the transmission cooler. Proper diagnosis in this area would be to inspect the cooler for any signs of physical damage. If no damage is found, carefully remove the cooler, and inspect the two (14) O-rings for damage and proper sealing. The dye photo shows a puddle of oil just under the cooler sealing area in the pocket, the fluid is being pushed through the case due to material porosity. This concern will require transmission assembly replacement.



6142814

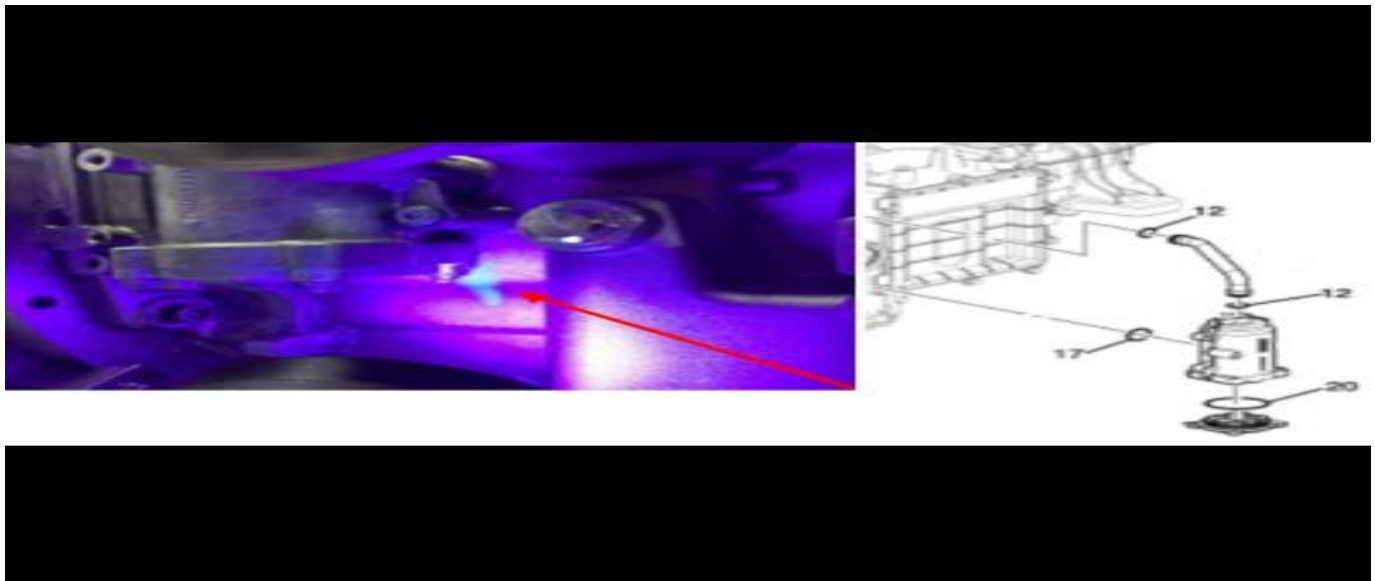
A small crack in the clutch cover area (1) of the input shaft seal can be mis-diagnosed as an input shaft seal leak (3). Additional cases have been verified at the input shaft end plug/seal (2), was damaged during transmission to engine mating.



6142818

Porosity concerns with the differential cover. This area needs to be carefully powder tested to verify the leak is not associated with the cover seal (16) or the dog-bones and seals. Technicians have stated that they have found the cover double-gasketed when they confused the metal differential shims with what they thought were gaskets. All shims need to be re-installed to retain proper bearing load on differential. If porosity is found in the cover, the transmission will require replacement.

Note: Due to a revision in service information, the engine cradle no longer needs to be removed to replace the auxiliary canister filter housing. This led to an update in the labor time study and the labor hours for this repair have been adjusted to reflect this.



6142744

The auxiliary canister filter can create leaks in several areas. The most common area is cover seal (20), O-ring installation issues after filter replacement. Other areas of concern can be found at the are O-rings (12) and (17).

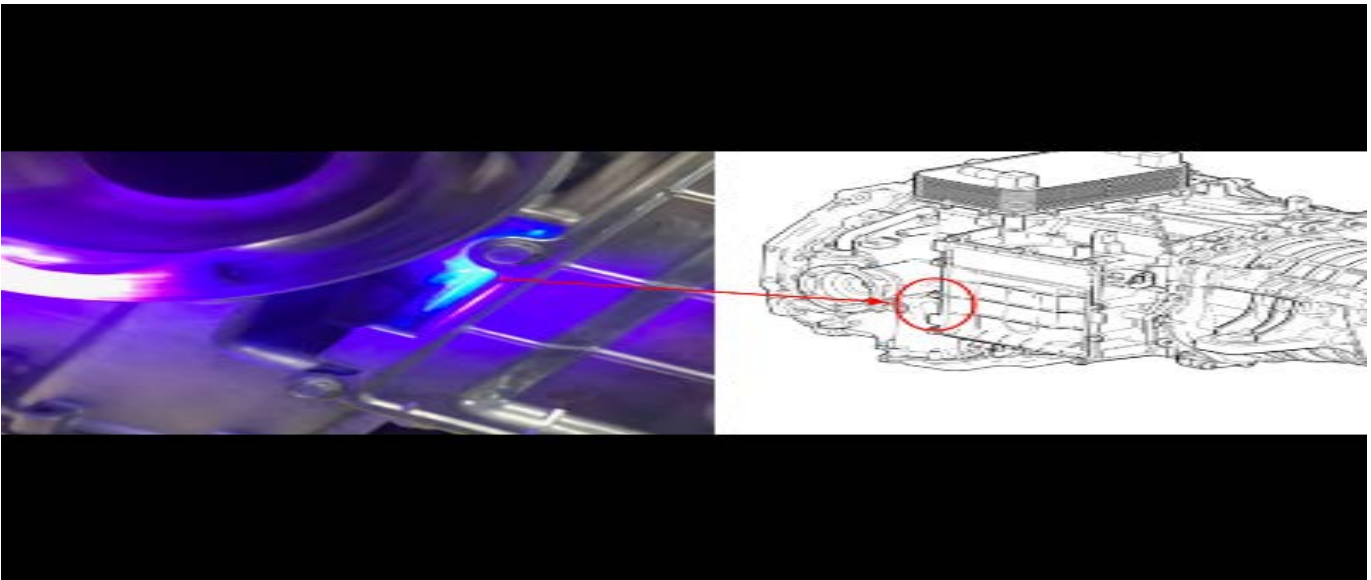
Note: Inspect the cover prior to replacement of the seal for porosity issues in the O-ring groove area.



6456550

Transmission rear cover area leak. (Tremec name plate):

- If there seems to be a leak in this area, be sure to clean the area thoroughly. Residual oil can get trapped between the outer surface and the O-ring.
- After powder testing, if a leak re-occurs, remove the cover, and inspect the O-ring for damage.
- If no obvious damage is found with the O-ring, be sure to inspect the cover itself for porosity issues in the O-ring groove. It is critical to identify the difference between a leak and dampness.



6142979

Transmission case porosity concerns have been found in the SAV cover area of the transmission. This is often the most misdiagnosed leak on this transmission. The fluid seeps through the case and runs down between the SAV cover and case to the pan rail, and often the transmission pan, and gasket get replaced, then the SAV cover, and finally the transmission. Often these

leaks will not develop by just allowing the engine to run. Usually, the vehicle will need to be lifted safely on a hoist with the wheels raised to allow the vehicle to run in gear. This action applies to most porosity leaks.

Version	4
Modified	Released August 24, 2022 Revised June 06, 2023 – Changed Engine and Transmission RPOs to All. Revised October 16, 2023 – Added the 2024 Model Year and Additional Information under Examples of Transmission Leak Areas of Concern section. Revised October 30, 2023 – Added Israel, Japan, Thailand to the Involved Region or Country section and added a Note above the auxiliary canister filter information in the Examples of Transmission Leak Areas of Concern section.

